

Construction of a Solar Battery Charger

*With a small 2 volt panel we can
charge 1.5V batteries (AAA, AA,
and C)!*



Materials for constructing a small photovoltaic battery charger:



4 small photovoltaic cells



5 pieces of silver
conductive strip



Duplex wire #20

Materials for constructing a small photovoltaic battery charger:



Aluminum Frame



Glass

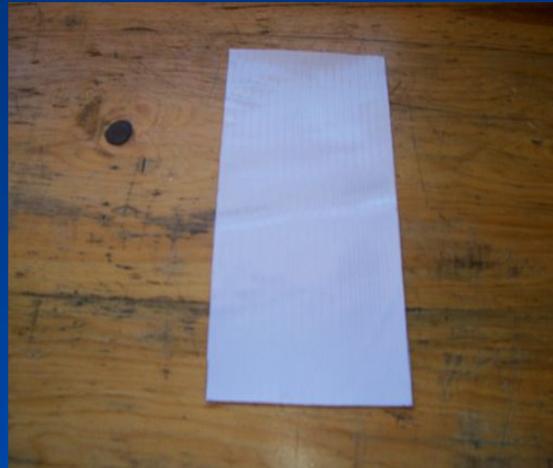


Tube silicone

Materials for constructing a small photovoltaic battery charger:



Liquid silicone



Piece of plastic panel backing



Small block of wood or plexiglass,
 $\frac{1}{2}$ " screws and Zinc
sheet metal

Tools for constructing a small photovoltaic battery charger



Tin Soldering Iron



Solar cell cutter



Metal cutting saw

Tools for constructing a small photovoltaic battery charger



Pliers



Wire Strippers



Screw Driver



Drill



• Multimeter

Steps for construction

- Cut the cells to an appropriate size using a model provided by the workshop and the cell cutter.
- Join the cells by forming a 'chain', by soldering the conductive strip to the cell with tin.
- After joining the cells, measure the volts and amps with the Millimeter to check that the connections have been made properly (you should read about 2 VDC and 0.5 amps in full sun). Check in direct and strong sunlight, not when there are clouds or in early morning or late afternoon.



Steps for construction

- At each end of the chain of cells, solder the conductive strip to the duplex wire #20. The black wire joins to the negative end; the red wire joins to the positive end.
- Clean the prepared glass with the newspaper.
- Make a line of tube silicon around the inside of the metal frame and adhere the cleaned glass to the frame and Let it dry .



Steps for construction

- Spread liquid silicon on the glass and let it sit for 15 minutes. Place cells upside down on the inside of the glass (so that the dark blue area is against the glass and can face the sun). Let dry for 8 hours.



Steps for construction

- Adhere the plastic panel backing to the silicon, making a small hole through which the panel wires can be thread.
- Fasten the zinc sheets to the wooden block with the 1/2" screws, making sure to space the two sides of the battery holder appropriately to hold the designated batteries.

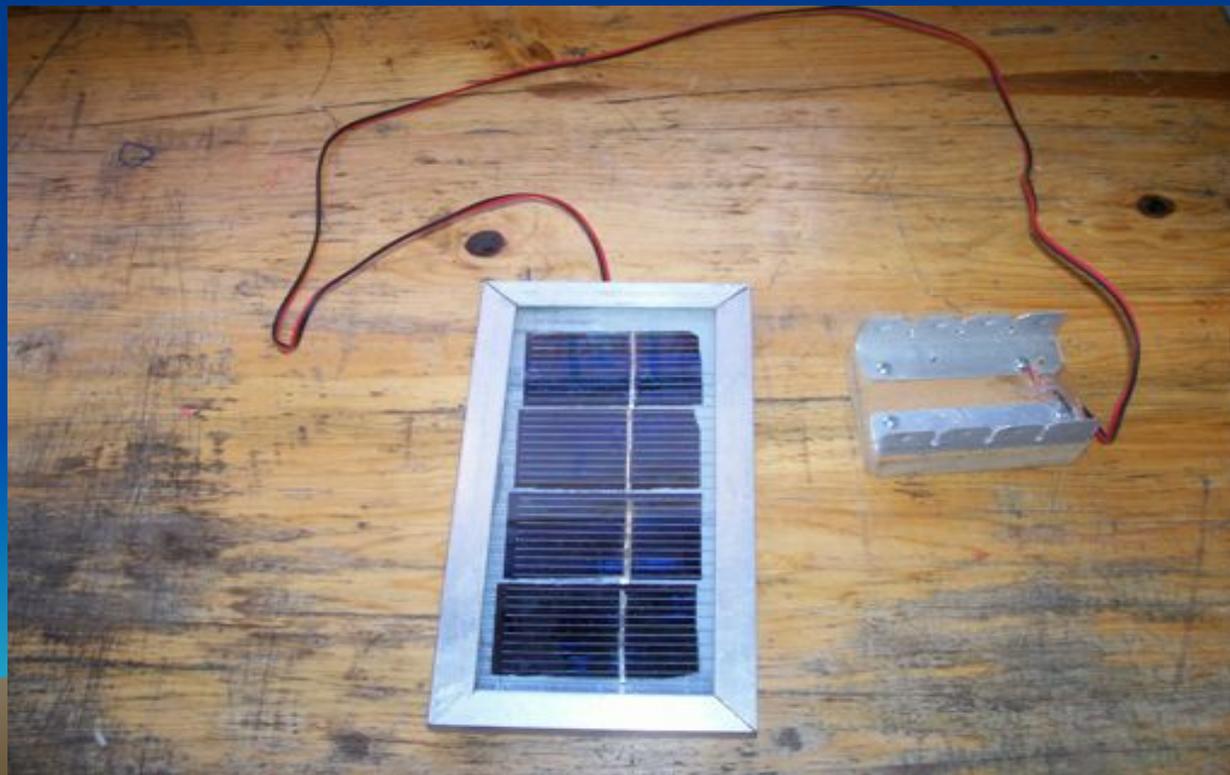


Steps for construction

- The free ends of the wire coming from the panel must be soldered to the zinc battery holder. Follow the same convention: red to positive and black to negative.



Congratulations your solar battery charger is ready to start charging!!



Thank you for your time

